



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

May 20, 2003

1775
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GROUP 1700

Applicants : Kenneth S. MURPHY
For : THERMAL BARRIER COATING
Serial No. : 10/024 518
Filed : Dec. 21, 2001

Group: 1775

Examiner: McNeil

Confirmation No. 2151

Commissioner for Patents
P.O. Box 1450
Arlington, VA 22313-1450

RESPONSE TO OFFICE ACTION

Dear Sir:

Please amend the above application as follows:

IN THE SPECIFICATION

A) Amend page 3, sixth paragraph as follows:

A1
Figure 3 is a graph of thermal conductivity versus temperature for various thermal barrier coatings including coatings pursuant to the invention designated 7Y46HfZrO and ~~20Y40HfZr~~ 20Y40HfZrO.

B) Amend page 3, eighth (partial) paragraph as follows:

A2
The present invention can be used to protect known nickel based and cobalt based superalloy substrates which may comprise equiaxed, DS (directionally solidified) and SC (single crystal) investment castings as well as other forms of these superalloys, such as forgings, pressed superalloy powder components, machined components, and other forms. For example only, representative nickel base superalloys include, but are not limited to, the well known Rene' alloy N5, MarM247, CMSX-4, PWA 1422, PWA 1480, PWA 1484, Rene' 80, Rene' 142, and SC 180 used for making SC and columnar grain turbine blades and vanes. Cobalt based superalloys which can be protected by the thermal barrier coating system include, but are not limited to, FSX-414, X-40, and MarM509. The invention is not limited to nickel or cobalt based superalloys and can